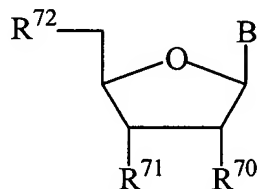


Please cancel claims 1-69 without prejudice.

Please add new claims 70-105 as follows:

-- 70. A labeled nucleoside/tide or nucleoside/tide analog comprising a rhodamine dye conjugated by a linker to a nucleoside/tide or nucleoside/tide analog, wherein:

the rhodamine is a rhodamine-type parent xanthene having attached to the xanthene C9 carbon a phenyl group that is further substituted with an ortho carboxy or ortho sulfonate group or a salt thereof, one to three substituted or unsubstituted aminopyridinium groups and a substituted or unsubstituted alkylthio, or arylthio group; and the nucleoside/tide or nucleoside/tide analog comprises the structure:

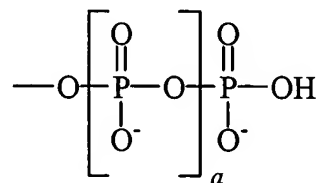


wherein:

B is a nucleobase selected from a purine, a 7-deazapurine, an 8-aza,7-deazapurine, a pyrimidine, a normal nucleobase and a common analog of a normal nucleobase;

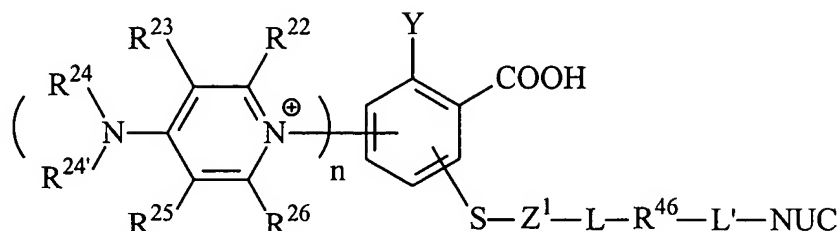
$R^{70}$  and  $R^{71}$ , when taken alone, are each independently selected from hydrogen, hydroxyl and a moiety which blocks polymerase-mediated template-directed polymerization, or when taken together form a bond such that the illustrated sugar is 2',3'-didehydroribose; and

$R^{72}$  is selected from hydroxyl, a phosphate ester having the formula:



where  $a$  is an integer from 0 to 2, and a phosphate ester analog, or a salt thereof.

71. The labeled nucleoside/tide or nucleoside/tide analog of claim 70 comprising the formula:



wherein:

Y is a rhodamine-type parent xanthene ring attached to the illustrated phenyl group at the xanthene C9 carbon;

$R^{22}$ ,  $R^{23}$ ,  $R^{25}$ , and  $R^{26}$  are independently selected from hydrogen and (C<sub>1</sub>-C<sub>6</sub>) alkyl;

$R^{24}$ , when taken alone, is (C<sub>1</sub>-C<sub>6</sub>) alkyl, or when taken together with  $R^{24'}$  is (C<sub>4</sub>-C<sub>10</sub>) alkyldiyl, (C<sub>4</sub>-C<sub>6</sub>) alkyleno, (C<sub>4</sub>-C<sub>6</sub>) heteroalkyldiyl and (C<sub>4</sub>-C<sub>6</sub>) heteroalkyleno;

$R^{24'}$ , when taken alone, is (C<sub>1</sub>-C<sub>6</sub>) alkyl, or when taken together with  $R^{24}$  is (C<sub>4</sub>-C<sub>10</sub>) alkyldiyl, (C<sub>4</sub>-C<sub>6</sub>) alkyleno, (C<sub>4</sub>-C<sub>6</sub>) heteroalkyldiyl and (C<sub>4</sub>-C<sub>6</sub>) heteroalkyleno;

n is 1, 2, or 3;

S is sulfur;

$Z^1$  is selected from (C<sub>1</sub>-C<sub>12</sub>) alkyldiyl, (C<sub>1</sub>-C<sub>12</sub>) alkyl independently substituted with one or more of the same or different  $W^1$  groups, (C<sub>5</sub>-C<sub>14</sub>) aryldiyl, and (C<sub>5</sub>-C<sub>14</sub>) aryl independently substituted with one or more of the same or different  $W^2$  groups;

$W^1$  is selected from -X, -R, =O, -OR, -SR, =S, -NRR, =NR, -CX<sub>3</sub>, -CN, -OCN, -SCN, -NCO, -NCS, -NO, -NO<sub>2</sub>, =N<sub>2</sub>, -N<sub>3</sub>, -S(O)<sub>2</sub>O<sup>-</sup>, -S(O)<sub>2</sub>OH, -S(O)<sub>2</sub>R, -C(O)R, -C(O)X, -C(S)R, -C(S)X, -C(O)OR, -C(O)O<sup>-</sup>, -C(S)OR, -C(O)SR, -C(S)SR, -C(O)NRR, -C(S)NRR and -C(NR)NRR;

$W^2$  is selected from -R, -OR, -SR, -NRR, -S(O)<sub>2</sub>O<sup>-</sup>, -S(O)<sub>2</sub>OH, -S(O)<sub>2</sub>R, -C(O)R, -C(O)X, -C(S)R, -C(S)X, -C(O)OR, -C(O)O<sup>-</sup>, -C(S)OR, -C(O)SR, -C(S)SR, -C(O)NRR, -C(S)NRR and -C(NR)NRR;

L is a selected from a bond, (C<sub>1</sub>-C<sub>12</sub>) alkyldiyl, (C<sub>1</sub>-C<sub>12</sub>) substituted alkyldiyl, (C<sub>6</sub>-C<sub>26</sub>) arylalkyldiyl, -O-, -S-, -NR-, -C(O)O-, -C(O)NR-, -NRS(O)<sub>2</sub>-, -NR-NR-, -NRC(O)O-, and -NRC(O)NR-;

R<sup>46</sup> is selected from -C(O)NR-, -C(O)O-, and -C(O)S-,

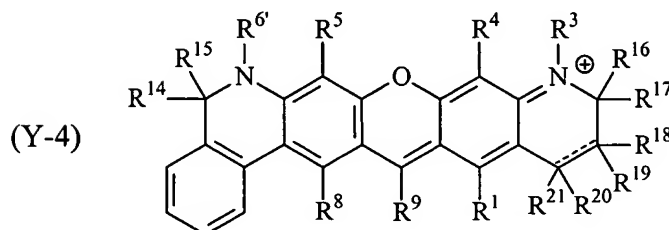
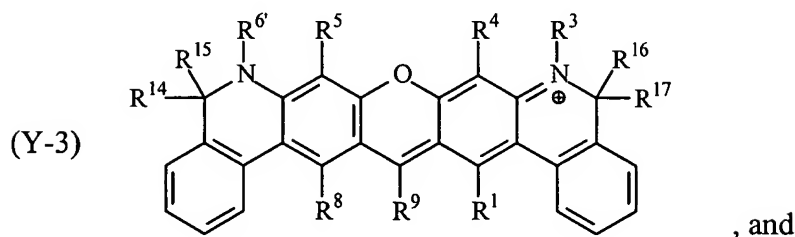
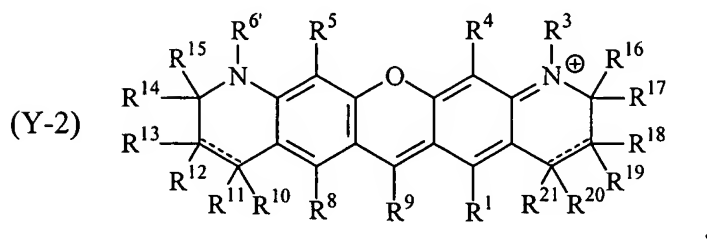
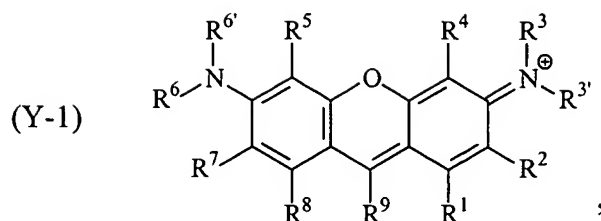
L' is selected from (C<sub>1</sub>-C<sub>20</sub>) alkyldiyl, (C<sub>1</sub>-C<sub>20</sub>) heteroalkyldiyl, (C<sub>1</sub>-C<sub>20</sub>) alkyleno, (C<sub>1</sub>-C<sub>20</sub>) heteroalkyleno, (C<sub>6</sub>-C<sub>26</sub>) arylalkyldiyl, (C<sub>5</sub>-C<sub>20</sub>) heteroarylalkyldiyl, and substituted forms thereof; and

NUC is a nucleoside/tide or nucleoside/tide analog;

each R is independently selected from hydrogen, (C<sub>1</sub>-C<sub>6</sub>) alkyl, (C<sub>5</sub>-C<sub>20</sub>) aryl, (C<sub>6</sub>-C<sub>26</sub>) arylalkyl, and (C<sub>5</sub>-C<sub>20</sub>) arylaryl; or when two R groups on the same nitrogen atom are taken together, those two R groups are (C<sub>4</sub>-C<sub>10</sub>) alkyldiyl or (C<sub>4</sub>-C<sub>10</sub>) alkyleno; and

each X is independently a halogen.

72. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 wherein Y comprises the rhodamine-type parent xanthene ring structures:



and a salt thereof, wherein:

$R^1$  and  $R^2$  when taken alone, are independently hydrogen or (C<sub>1</sub>–C<sub>6</sub>) alkyl;

$R^3$  and  $R^{3'}$  when taken alone, are independently selected from hydrogen, (C<sub>1</sub>–C<sub>6</sub>) alkyl, (C<sub>5</sub>–C<sub>14</sub>) aryl and (C<sub>5</sub>–C<sub>14</sub>) arylaryl, or when taken together is (C<sub>4</sub>–C<sub>6</sub>) alkylidyl or (C<sub>4</sub>–C<sub>6</sub>) alkylene, or when individually taken together with  $R^2$  or  $R^4$  is (C<sub>2</sub>–C<sub>6</sub>) alkylidyl or (C<sub>2</sub>–C<sub>6</sub>) alkylene;

$R^4$ , when taken alone, is selected from hydrogen and (C<sub>1</sub>–C<sub>6</sub>) alkyl, or when taken together with  $R^3$  or  $R^{3'}$  is (C<sub>2</sub>–C<sub>6</sub>) alkylidyl or (C<sub>2</sub>–C<sub>6</sub>) alkylene;

$R^5$ , when taken alone, is selected from hydrogen and (C<sub>1</sub>–C<sub>6</sub>) alkyl, or when taken together with  $R^6$  or  $R^{6'}$  is (C<sub>2</sub>–C<sub>6</sub>) alkylidyl or (C<sub>2</sub>–C<sub>6</sub>) alkylene;

$R^6$  and  $R^{6'}$  when taken alone, are selected from hydrogen,  $(C_1-C_6)$  alkyl,  $(C_5-C_{14})$  aryl and arylaryl, or when taken together are  $(C_4-C_6)$  alkylidiyl or alkyleno, or when individually taken together with  $R^5$  or  $R^7$  is  $(C_2-C_6)$  alkylidiyl or alkyleno;

$R^7$ , when taken alone, is selected from hydrogen and  $(C_1-C_6)$  alkyl, or when taken together with  $R^6$  or  $R^{6'}$  is  $(C_2-C_6)$  alkylidiyl or alkyleno;

$R^8$ , when taken alone, is selected from hydrogen and  $(C_1-C_6)$  alkyl;

$R^{10}$ ,  $R^{11}$ ,  $R^{12}$ ,  $R^{13}$ ,  $R^{14}$ ,  $R^{15}$ ,  $R^{16}$ ,  $R^{17}$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  are each independently selected from hydrogen and  $(C_1-C_6)$  alkyl, or

when  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  taken together are  $(C_5-C_{14})$  aryleno or  $(C_5-C_{14})$  aryleno substituted with one or more of the same or different  $(C_1-C_6)$  alkyl, or

when  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  taken together are  $(C_5-C_{14})$  aryleno or aryleno substituted with one or more of the same or different  $(C_1-C_6)$  alkyl; and

$R^9$  is the point of attachment to the xanthene C9 carbon.

73. The labeled nucleoside/tide or nucleoside/tide analog of claim 72 wherein  $R^2$  when taken together with  $R^3$  or  $R^{3'}$  is  $(C_2-C_6)$  alkylidiyl or  $(C_2-C_6)$  alkyleno.

74. The labeled nucleoside/tide or nucleoside/tide analog of claim 72 wherein:  
an alkylidiyl or alkyleno bridge formed by taking  $R^2$  together with  $R^3$  or  $R^{3'}$ ,  $R^7$  together with  $R^6$  or  $R^{6'}$ , or  $R^4$  together with  $R^3$  or  $R^{3'}$ , is ethano, propano, 1,1-dimethylethano, 1,1-dimethylpropano or 1,1,3-trimethylpropano;

an aryleno bridge formed by taking  $R^1$  together with  $R^2$  is benzo or naphtho;

an alkylidiyl or alkyleno bridge formed by taking  $R^3$  together with  $R^{3'}$ , or  $R^6$  together with  $R^{6'}$ , is butano;

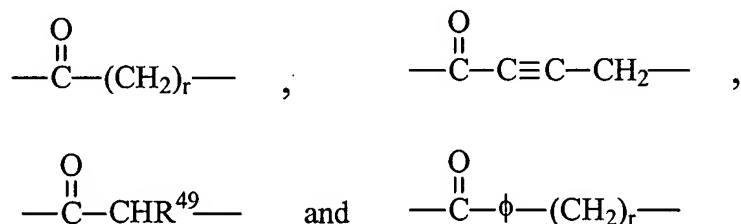
an alkylidiyl or alkyleno bridge formed by taking  $R^5$  together with  $R^6$  or  $R^{6'}$  is ethano, propano, 1,1-dimethylethano, 1,1-dimethylpropano and 1,1,3-trimethylpropano; and

an aryleno bridge formed by taking  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  together, or  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  together, is benzo.

75. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 in which  $Z^1$  is phenyldiyl.

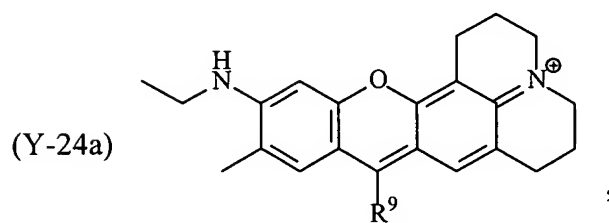
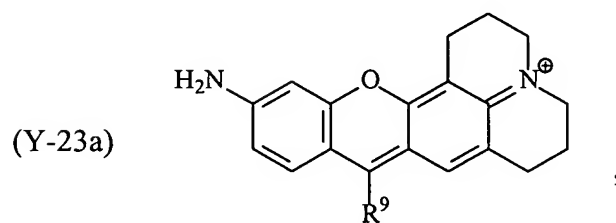
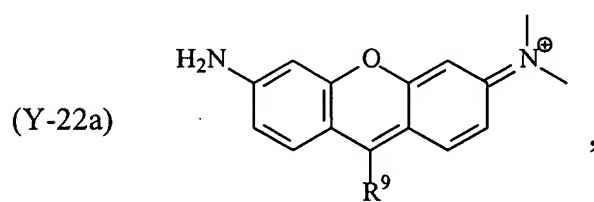
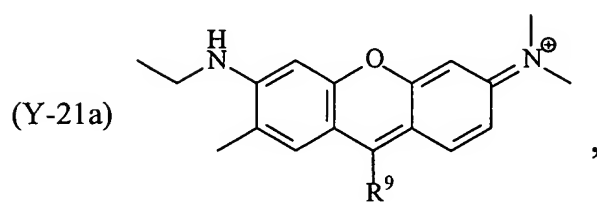
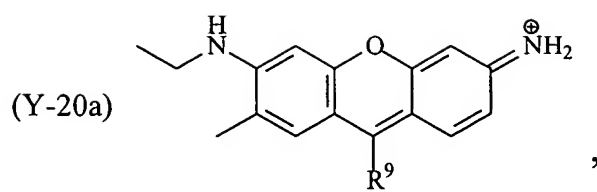
76. The labeled nucleoside/tide or nucleoside/tide analog of Claim 71 in which  $L'$  is selected from:  $—C\equiv C—CH_2—$  and  $—C\equiv C—CH_2—O—CH_2CH_2—$ .

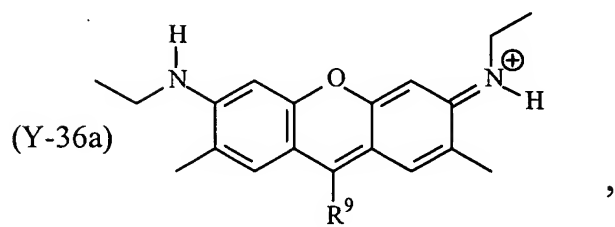
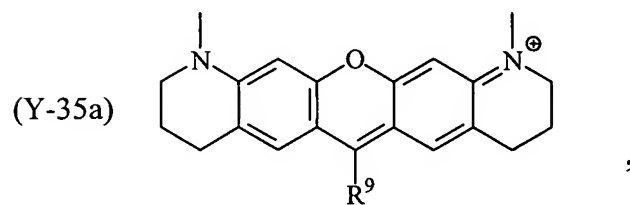
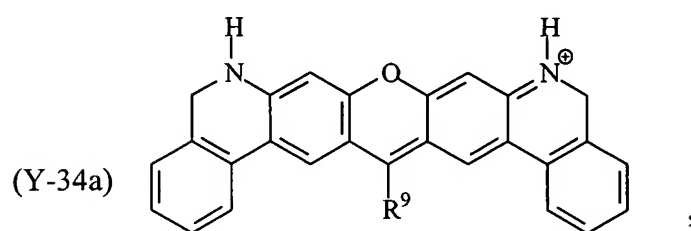
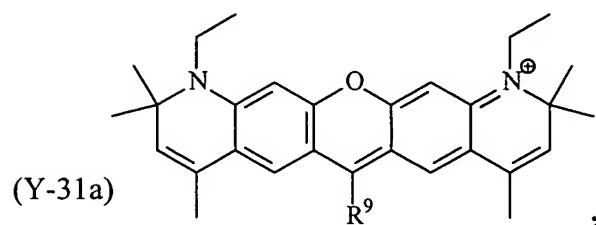
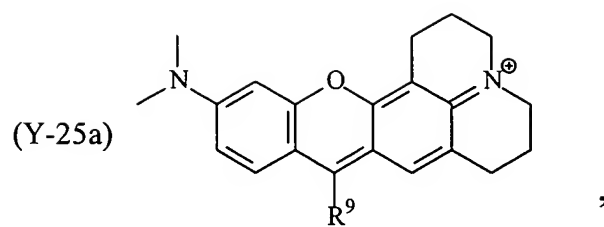
77. The labeled nucleoside/tide or nucleoside/tide analog of Claim 71 in which  $L'$  is:  $—C\equiv C—CH_2—O—CH_2CH_2—\overset{\overset{R^{47}}{|}}{N}—R^{48}—$  wherein  $R^{47}$  is hydrogen or  $(C_1-C_6)$  alkyl, and  $R^{48}$  is selected from:



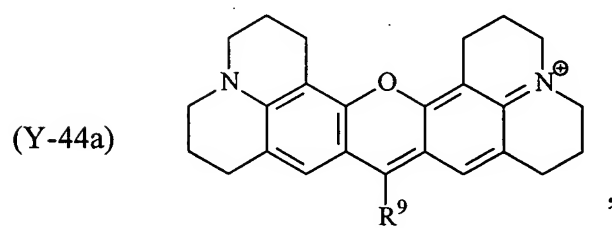
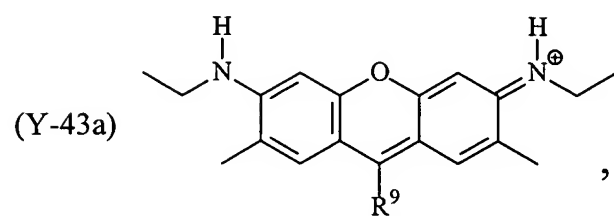
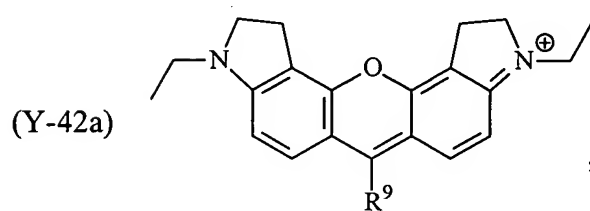
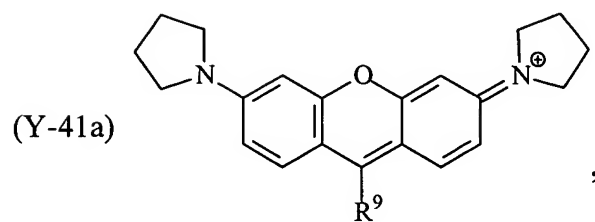
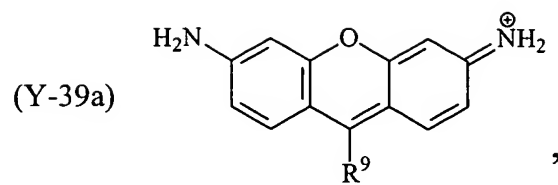
wherein each  $r$  is independently an integer from 1 to 6;  $R^{49}$  is hydrogen,  $(C_1-C_6)$  alkyl, or an amino acid side chain; and  $\phi$  is phenyldiyl or substituted phenyldiyl.

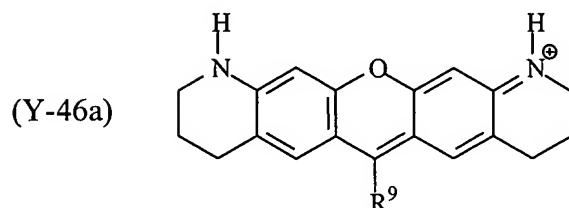
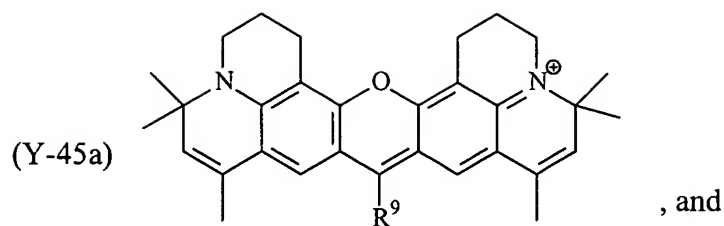
78. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 in which  $Y$  is selected from the structures:





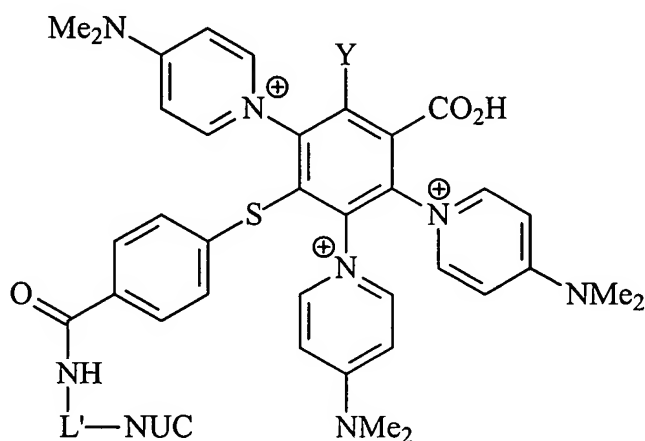






79. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 wherein  $R^{22}$ ,  $R^{23}$ ,  $R^{25}$ , and  $R^{26}$  are each hydrogen.

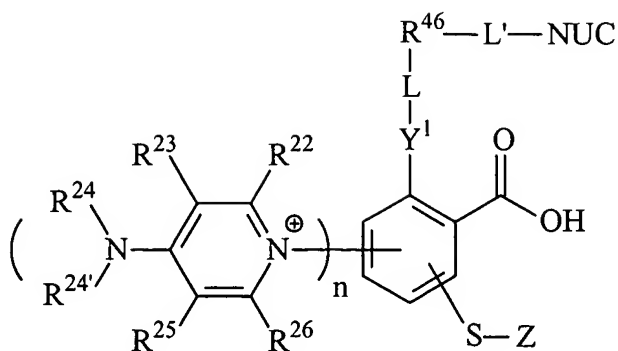
80. The labeled nucleoside/tide or nucleoside/tide analog of claim 71 which comprises the structure:



or a salt thereof.

81. The labeled nucleoside/tide or nucleoside/tide analog of Claim 80 in which  $L'$  is selected from:  $-C\equiv C-CH_2-$  and  $-C\equiv C-CH_2-O-CH_2CH_2-$ .

82. The labeled nucleoside/tide or nucleoside/tide analog of claim 70 comprising the formula:



wherein:

$Y^1$  is a rhodamine-type parent xanthene ring attached to the illustrated phenyl group at the xanthene C9 carbon;

$R^{22}$ ,  $R^{23}$ ,  $R^{25}$ , and  $R^{26}$  are independently selected from hydrogen and (C<sub>1</sub>-C<sub>6</sub>) alkyl;

$R^{24}$ , when taken alone, is (C<sub>1</sub>-C<sub>6</sub>) alkyl, or when taken together with  $R^{24'}$  is (C<sub>4</sub>-C<sub>10</sub>) alkylidyl, (C<sub>4</sub>-C<sub>6</sub>) alkylene, (C<sub>4</sub>-C<sub>6</sub>) heteroalkylidyl or (C<sub>4</sub>-C<sub>6</sub>) heteroalkylene;

$R^{24'}$ , when taken alone, is (C<sub>1</sub>-C<sub>6</sub>) alkyl, or when taken together with  $R^{24}$  is (C<sub>4</sub>-C<sub>10</sub>) alkylidyl, (C<sub>4</sub>-C<sub>6</sub>) alkylene, (C<sub>4</sub>-C<sub>6</sub>) heteroalkylidyl or (C<sub>4</sub>-C<sub>6</sub>) heteroalkylene;

$n$  is 1, 2, or 3;

$S$  is sulfur;

$Z$  is (C<sub>1</sub>-C<sub>12</sub>) alkyl, (C<sub>1</sub>-C<sub>12</sub>) alkyl substituted with one or more of the same or different  $W^1$  groups, (C<sub>5</sub>-C<sub>20</sub>) aryl, and (C<sub>5</sub>-C<sub>20</sub>) aryl substituted with one or more of the same or different  $W^2$  groups;

$W^1$  is selected from -X, -R, =O, -OR, -SR, =S, -NRR, =NR, -CX<sub>3</sub>, -CN, -OCN, -SCN, -NCO, -NCS, -NO, -NO<sub>2</sub>, =N<sub>2</sub>, -N<sub>3</sub>, -S(O)<sub>2</sub>O<sup>-</sup>, -S(O)<sub>2</sub>OH, -S(O)<sub>2</sub>R, -C(O)R, -C(O)X, -C(S)R, -C(S)X, -C(O)OR, -C(O)O<sup>-</sup>, -C(S)OR, -C(O)SR, -C(S)SR, -C(O)NRR, -C(S)NRR and -C(NR)NRR;

$W^2$  is selected from -R, -OR, -SR, -NRR, -S(O)<sub>2</sub>O<sup>-</sup>, -S(O)<sub>2</sub>OH, -S(O)<sub>2</sub>R, -C(O)R, -C(O)X, -C(S)R, -C(S)X, -C(O)OR, -C(O)O<sup>-</sup>, -C(S)OR, -C(O)SR, -C(S)SR, -C(O)NRR, -C(S)NRR and -C(NR)NRR;

$L$  is selected from a bond, (C<sub>1</sub>-C<sub>12</sub>) alkylidyl, (C<sub>1</sub>-C<sub>12</sub>) substituted alkylidyl, (C<sub>6</sub>-C<sub>26</sub>) arylalkylidyl, -O-, -S-, -NR-, -C(O)O-, -C(O)NR-, -NRS(O)<sub>2</sub>-, -NR-NR-, -NRC(O)O-, and -NRC(O)NR-;

$R^{46}$  is selected from  $-C(O)NR-$ ,  $-C(O)O-$ , and  $-C(O)S-$ ,

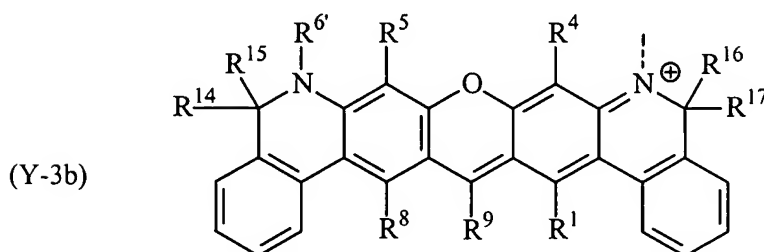
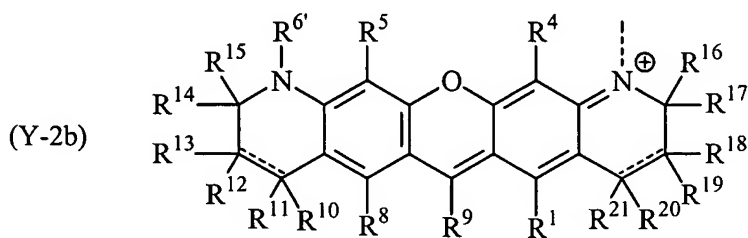
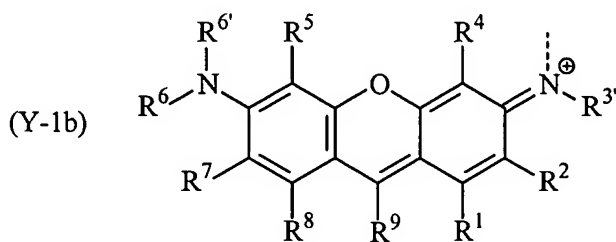
$L'$  is selected from  $(C_1-C_{20})$  alkylidiyl,  $(C_1-C_{20})$  heteroalkylidiyl,  $(C_1-C_{20})$  alkyleno,  $(C_1-C_{20})$  heteroalkyleno,  $(C_6-C_{26})$  arylalkylidiyl,  $(C_5-C_{20})$  heteroarylalkylidiyl, and substituted forms thereof; and

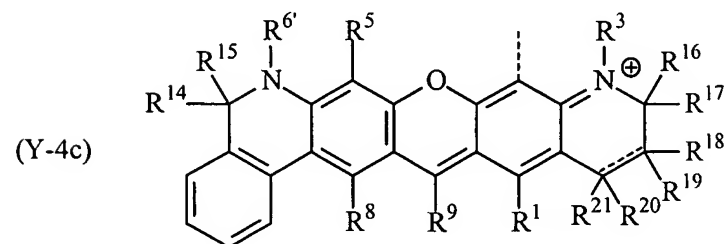
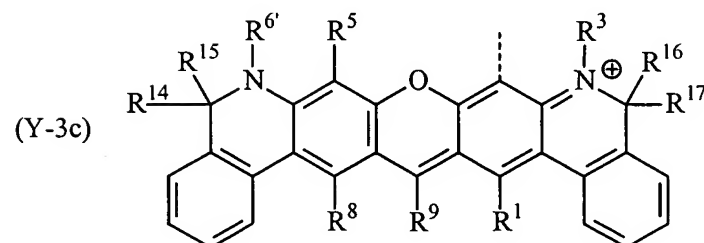
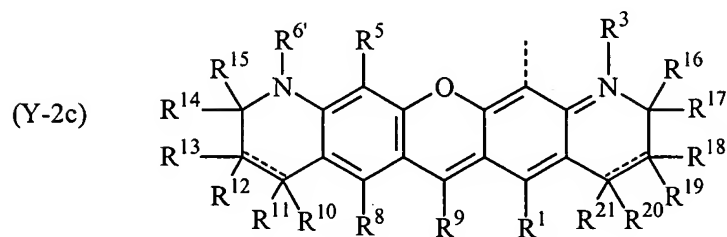
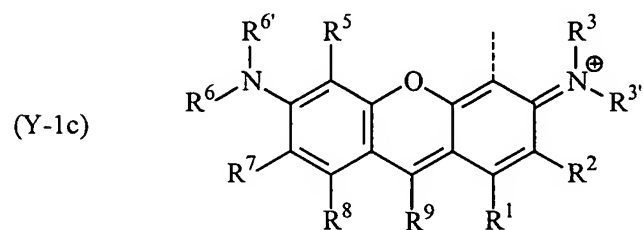
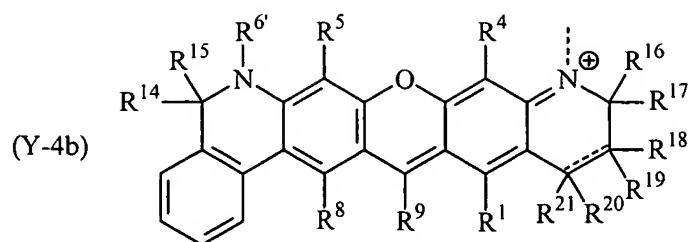
NUC is a nucleoside/tide or nucleoside/tide analog;

each  $R$  is independently selected hydrogen,  $(C_1-C_6)$  alkyl,  $(C_5-C_{20})$  aryl,  $(C_6-C_{20})$  arylalkyl, and  $(C_6-C_{20})$  arylaryl; or when two  $R$  groups on the same nitrogen atom are taken together, those two  $R$  groups are  $(C_4-C_{10})$  alkylidiyl or  $(C_4-C_{10})$  alkyleno; and

each  $X$  is independently a halogen.

83. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 in which  $Y^1$  is selected from:





wherein the dashed line at the nitrogen or C4 atom indicates the point of attachment of L.

84. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 wherein:

an alkylidyl or alkylene bridge formed by taking  $R^2$  together with  $R^3$ ,  $R^4$  together with  $R^3$ ,  $R^5$  together with  $R^6$ , or  $R^7$  together with  $R^6$ , is ethano, propano, 1,1-dimethylethano, 1,1-dimethylpropano or 1,1,3-trimethylpropano; and

an arylene bridge formed by taking  $R^{10}$ ,  $R^{11}$ ,  $R^{12}$  and  $R^{13}$  together or  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$  and  $R^{21}$  together is benzo.

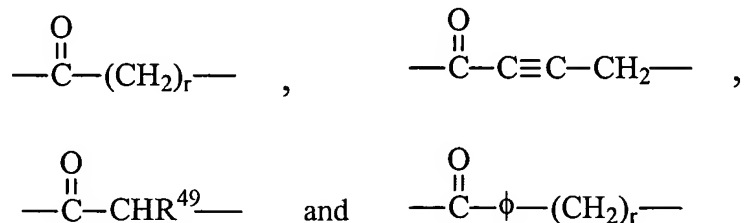
85. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which L is selected from phenyldiyl and naphthyldiyl.

86. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which L is  $-(CH_2)_i-\phi-$  where  $i$  is an integer from 1 to 6 and  $\phi$  is phenyldiyl or naphthyldiyl.

87. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which Z is selected from phenyl, benzyl, naphthyl, pyridyl and purinyl.

88. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 in which L' is selected from:  $-\text{C}\equiv\text{C}-\text{CH}_2-$  and  $-\text{C}\equiv\text{C}-\text{CH}_2-\text{O}-\text{CH}_2\text{CH}_2-$

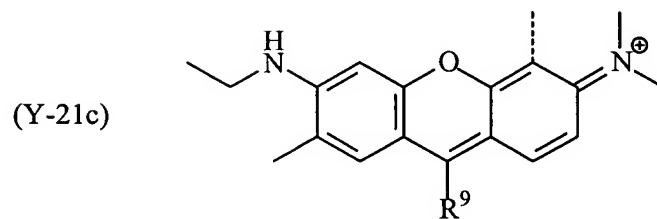
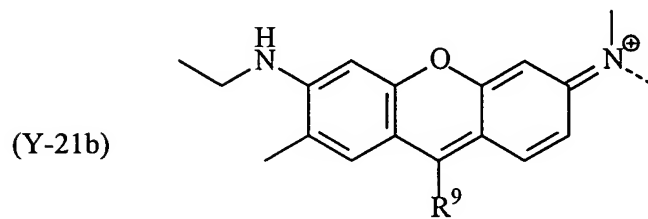
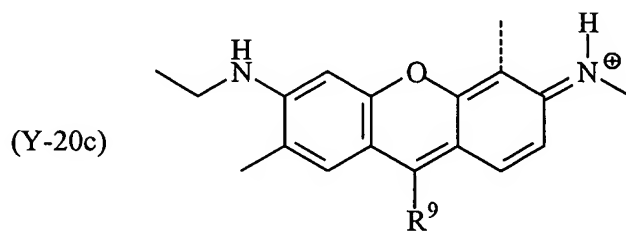
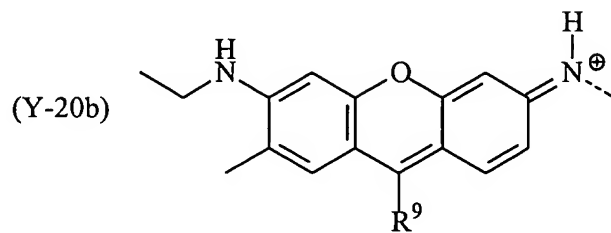
89. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 in which L' is:  $-\text{C}\equiv\text{C}-\text{CH}_2-\text{O}-\text{CH}_2\text{CH}_2-\text{N}(\text{R}^{47})-\text{R}^{48}-$  wherein  $\text{R}^{47}$  is hydrogen or  $(\text{C}_1-\text{C}_6)$  alkyl, and  $\text{R}^{48}$  is selected from:

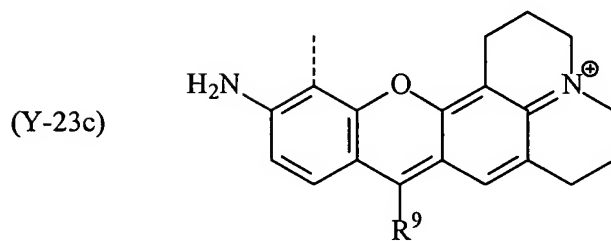
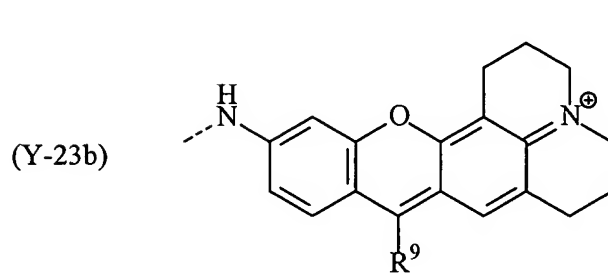
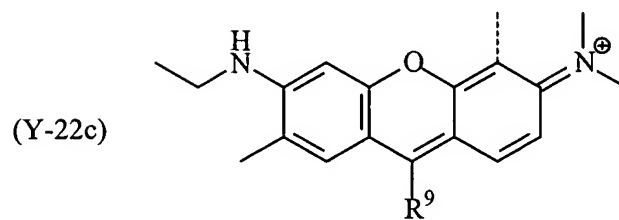
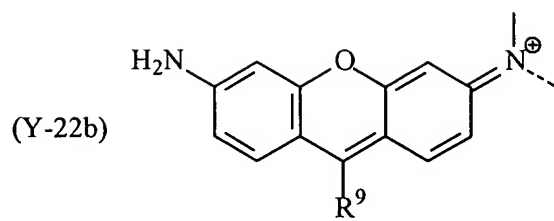


wherein each  $r$  is independently an integer from 1 to 6;  $\text{R}^{49}$  is hydrogen,  $(\text{C}_1-\text{C}_6)$  alkyl, or an amino acid side chain; and  $\phi$  is phenyldiyl or substituted phenyldiyl.

90. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 wherein  $\text{R}^{22}$ ,  $\text{R}^{23}$ ,  $\text{R}^{25}$ , and  $\text{R}^{26}$  are each hydrogen.

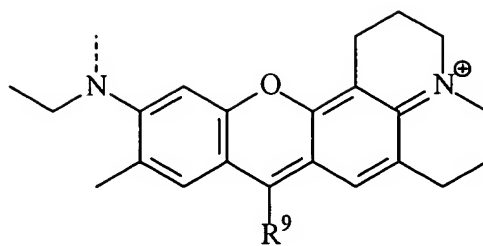
91. The labeled nucleoside/tide or nucleoside/tide analog of claim 82 in which  $Y^1$  is selected from the group consisting of:



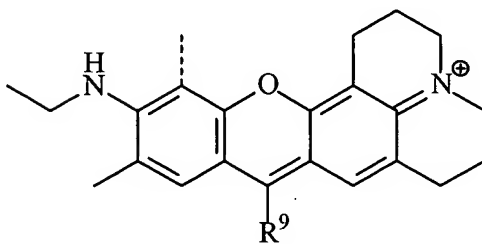




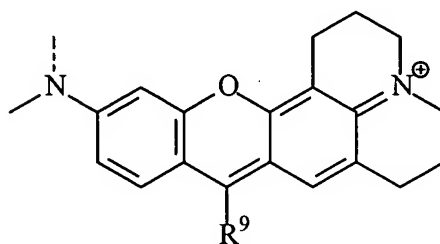
(Y-24b)



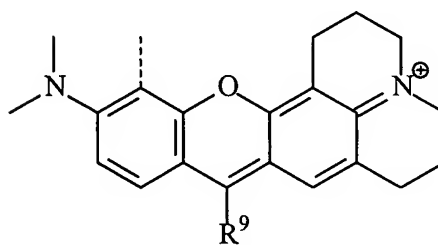
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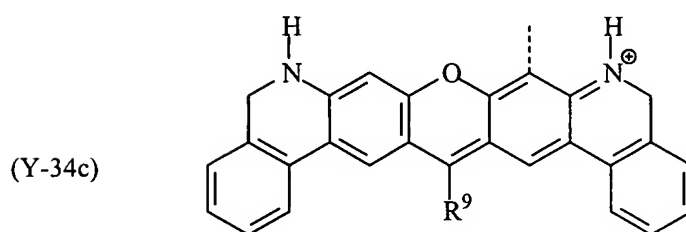
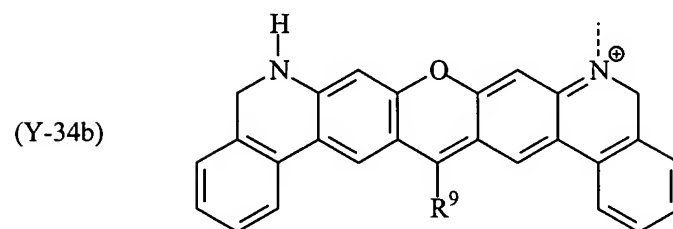
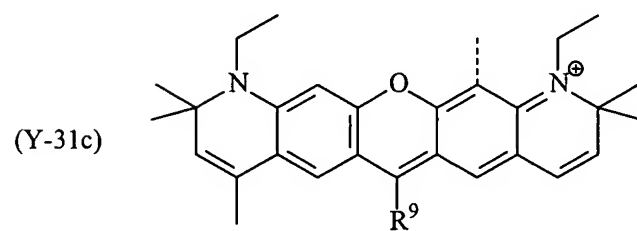
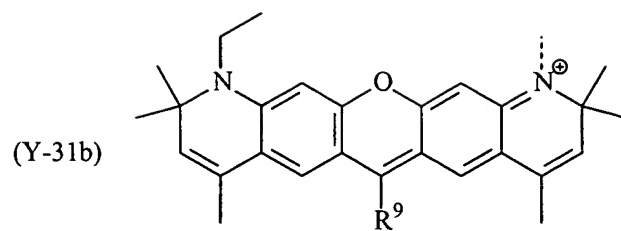


(Y-25b)

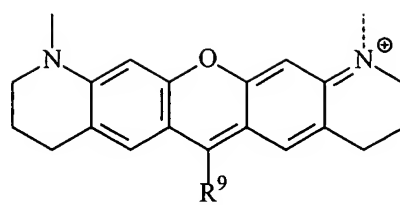


(Y-25c)

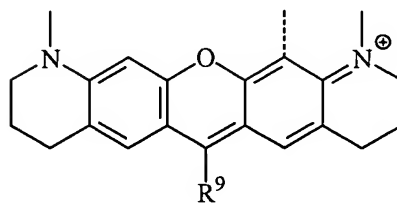




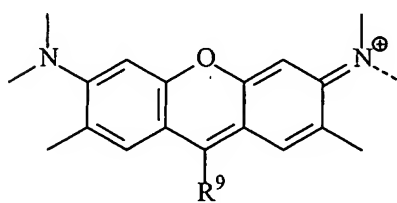
(Y-35b)



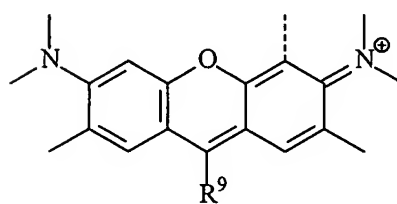
(Y-35c)



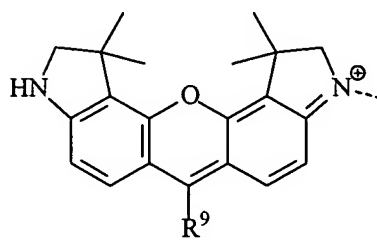
(Y-36b)

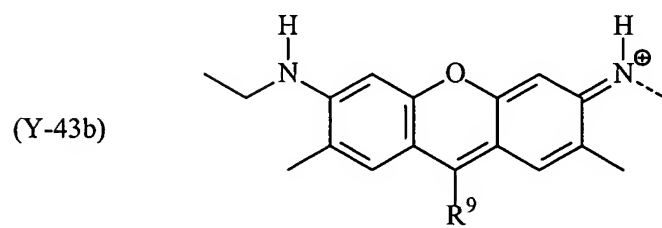
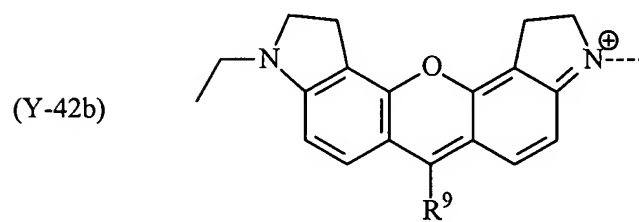
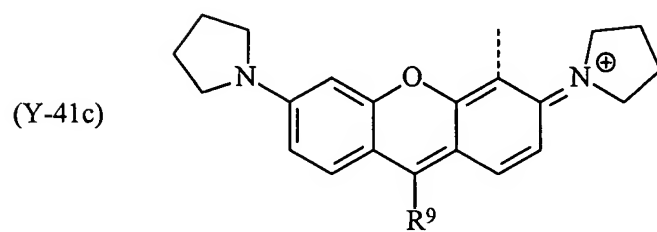
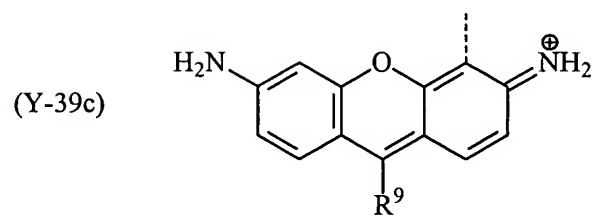
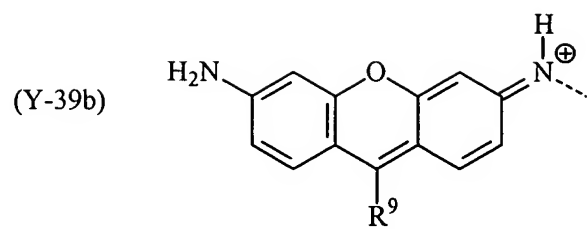


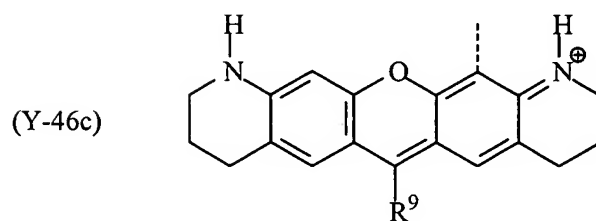
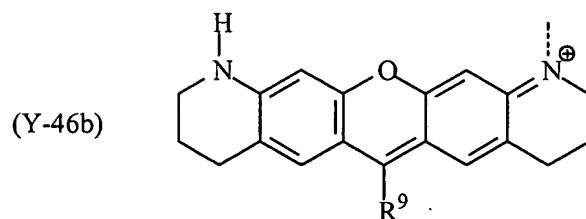
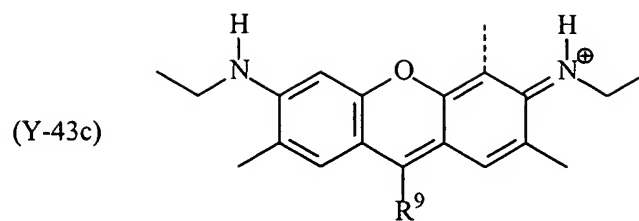
(Y-36c)



(Y-37b)

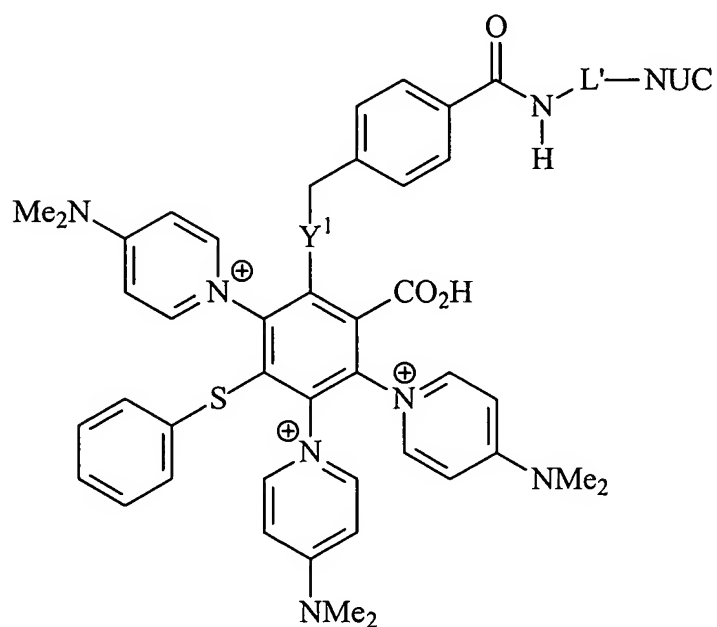






wherein the dash at the nitrogen or C4 atom indicates the point of attachment of L.

92. The labeled nucleoside/tide or nucleoside/tide analog of Claim 82 which has the structure:



93. The labeled nucleoside/tide or nucleoside/tide analog of Claim 92 in which L' is selected from:  $\text{—C}\equiv\text{C—CH}_2\text{—}$  and  $\text{—C}\equiv\text{C—CH}_2\text{—O—CH}_2\text{CH}_2\text{—}$ .

94. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 further comprising a donor dye or an acceptor dye whereby the rhodamine dye and the donor dye or acceptor dye form an energy-transfer dye pair.

95. The labeled nucleoside/tide or nucleoside/tide analog of Claim 94 wherein the donor dye or acceptor dye is a fluorescein, rhodamine, cyanine, phthalocyanine or squaraine.

96. The labeled nucleoside/tide or nucleoside/tide analog of Claim 94 wherein the donor dye or acceptor dye is 4'-aminomethyl-6-carboxyfluorescein and the 4'-aminomethyl-6-carboxyfluorescein is covalently attached to the rhodamine dye by a linker.

97. The labeled nucleoside/tide or nucleoside/tide analog of Claim 96 wherein the aminomethylfluorescein is further covalently attached by a linker L to the nucleobase B of the nucleoside/tide or nucleoside/tide analog.

98. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 which is enzymatically incorporatable.

99. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 which is a terminator.

100. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 which is enzymatically extendable.

101. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 wherein  $R^{71}$  and  $R^{70}$  are hydrogen.

102. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 wherein  $R^{71}$  and  $R^{70}$  are hydroxyl.

103. The labeled nucleoside/tide or nucleoside/tide analog of Claim 70 wherein  $R^{71}$  is hydroxyl, and  $R^{70}$  is hydrogen.